

WHAT IS CLAIMED IS:

1. A liquid container comprising:
 - a liquid containing portion in which liquid is contained;
 - 5 a liquid supply orifice which supplies the liquid contained in said liquid containing portion to outside;
 - an approximately-polygonal prism made of light-transmitting material, having a surface integrated with an external wall surface of said liquid containing
 - 10 portion and a plurality of reflection surfaces, different from said external wall surface, which serve as an interface with respect to the liquid, having a predetermined angle with respect to an optical path of light emitted from a light source in a predetermined
 - 15 position outside the liquid containing portion,
 - wherein said liquid container has a flat shape, and a lengthwise direction of the flat shape is in the same direction as a lengthwise direction of said prism.
- 20 2. The liquid container according to claim 1, wherein said prism is integrally molded with said liquid container.
3. The liquid container according to claim 2, wherein
- 25 said prism is divided into a plurality of prisms in the lengthwise direction of said prism.

4. The liquid container according to claim 2, wherein
said prism is integrally molded with said liquid
container such that said prism has a space concaved
5 inwardly from the outside of said liquid container.

5. The liquid container according to claim 1, wherein
said prism has a isosceles triangular cross section
vertical to the lengthwise direction.

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6. The liquid container according to claim 5, wherein
the length of said prism in the lengthwise direction is
longer than the length of a base of the isosceles
triangular cross section.

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7. The liquid container according to claim 1, further
comprising a liquid-holding material containing portion
containing liquid-holding material,

wherein said liquid containing portion and said
20 liquid-holding material containing portion communicate
with each other by a communicating path.

8. The liquid container according to claim 1, wherein
said liquid is ink, or processed liquid discharged to a
25 print medium so as to improve fixability or water
repellency of an image printed with ink on said print

medium or to improve quality of the image.

9. A cartridge including the liquid container in any one of claims 1 to 8, comprising:

- 5 a printhead which discharges ink contained in said liquid container; and
a holder which holds said liquid container.

10. The cartridge according to claim 9, wherein said
10 liquid container is detachable from said holder.

11. The cartridge according to claim 9, wherein said printhead is an ink-jet printhead which performs printing by discharging ink.

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12. The cartridge according to claim 11, wherein said ink-jet printhead which discharges ink by utilizing thermal energy comprises a thermal energy transducer to generate the thermal energy to be applied to the ink.

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13. A printing apparatus using the cartridge in any one of claims 9 to 12, which prints an image on a print medium, comprising:

- optical means for emitting light to said prism and
25 receiving reflection light from said prism;
detection means for detecting existence/absence of

the liquid contained in said liquid container based on
the reflection light received by said optical means; and
control means for controlling printing operation
by said printhead based on the result of detection
5 obtained by said detection means.

14. The printing apparatus according to claim 13,
further comprising:
scan means, holding a plurality of the cartridges,
10 for scan-moving; and
conveyance means for conveying said print medium,
wherein among said plurality of the cartridges, a
first cartridge and a second cartridge are mounted on
said scan means in positions shifted from each other in
15 a print-medium conveyance direction by said conveyance
means,
and wherein by movement of said first and second
cartridges by said scan means, the light is emitted from
said optical means onto the prism of the liquid
20 container mounted on said first cartridge and the prism
of the liquid container mounted on said second cartridge.

15. The printing apparatus according to claim 14,
wherein an amount of shift between said first cartridge
25 and said second cartridge is less than the length of
said prism in the lengthwise direction.

16. The printing apparatus according to claim 15,
wherein said optical means includes a light emitting
device to emit light and a photoreception device to
5 receive light,
and wherein said light emitting device and said
photoreception device are arrayed along a scan direction
of said scan means.

10 17. A liquid-discharge printing apparatus comprising:
a printhead which performs printing by discharging
ink;
a liquid container which contains the liquid
discharged from said printhead;
15 scan means, holding said printhead and said liquid
container, for scan-moving;
optical means, provided near said scan means,
having a light emitter to emit light onto said liquid
container and a photoreceptor to receive reflection
20 light of the light; and
detection means for detecting existence/absence of
the liquid contained in said liquid container, based on
the reflection light of the light emitted onto said
liquid container, received by said photoreceptor,
25 wherein said liquid container includes an
approximately-polygonal prism made of light-transmitting

material, having a surface integrated with an external wall surface of said liquid container and a plurality of reflection surfaces, different from said external wall surface, which serve as an interface with respect to the liquid, having a predetermined angle with respect to an optical path of light emitted from the light emitter,
and wherein said scan means holds said liquid container such that a lengthwise direction of said prism is diagonal to a scan direction of said scan means.

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18. A liquid container comprising:
a container containing liquid;
a prism made of light-transmitting material, having a first surface to receive light emitted from an external device and a second surface to receive light reflected by said first surface and change an optical path to direct the light toward said external device, provided on a bottom of said container, projecting toward the inside said container from the bottom; and
a groove or projection, provided around said prism or on said first and second surfaces of said prism, which absorbs said liquid by capillarity.

19. The liquid container according to claim 18, wherein said prism and said groove or projection is integrally molded with said liquid container.

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20. The liquid container according to claim 18,
wherein said groove is provided on the bottom of said
container so as to surround said prism.

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21. The liquid container according to claim 20,
wherein said container has a first space containing only
said liquid and a second space containing absorbent
material which absorbs and holds said liquid, and has an
10 outlet for discharging said liquid to the outside on a
bottom of said second space.

22. The liquid container according to claim 21,
wherein said prism is provided in the first space, and
15 wherein another groove is further provided to introduce
said liquid from said groove to the second space.

23. The liquid container according to claim 18,
wherein said groove or projection is provided along end
20 portions of the first and second surfaces.

24. An ink tank detachably held on a tank holder,
having a movable lever with a first engagement latch to
engage with a first engagement hole provided on a side
25 wall of said tank holder and a second engagement latch
to engage with a second engagement hole provided on

another side wall of said tank holder opposite to the side wall having said first engagement hole,

wherein said ink tank has a positioning pin on its bottom surface, and said tank holder has a positioning hole to receive the positioning pin upon attachment of said ink tank to said tank holder,

and wherein a prism is provided on an inner bottom of said ink tank such that said prism is positioned opposite to the position of an optical sensor for residual ink detection provided outside of said ink tank when said ink tank is attached to said tank holder,

further wherein said prism is provided in a position between the second engagement latch and the positioning pin,

further wherein the positioning pin and the positioning hole have thrust portions to thrust upon each other, and the thrust portion of the positioning pin has a flat surface.

25. The ink tank according to claim 24, wherein the first engagement latch of the movable lever is engaged with the first engagement hole of said tank holder by utilizing resilience of the movable lever,

and wherein said ink tank is attached and fixed to said tank holder by pressing said ink tank, with the second engagement latch engaged with the second

engagement hole of said tank holder, against the side wall on which the second engagement hole is provide.

26. The ink tank according to claim 25, wherein said
5 flat surface is diagonal to a direction in which said ink tank is pressed upon the side wall.

27. A tank holder which detachably holds an ink tank, having a first engagement hole to engage with a first
10 engagement latch of a movable lever provided on one side surface of said ink tank and a second engagement hole to engage with a second engagement latch provided on another side surface of said ink tank opposite to the side surface having the movable lever,

15 wherein said ink tank has a positioning pin on its bottom surface, and said tank holder has a positioning hole to receive the positioning pin upon attachment of said ink tank to said tank holder,

and wherein a prism is provided on an inner bottom
20 of said ink tank such that said prism is positioned opposite to the position of an optical sensor for residual ink detection provided outside of said ink tank when said ink tank is attached to said tank holder,

further wherein said prism is provided in a
25 position between the second engagement latch and the positioning pin,

further wherein the positioning pin and the positioning hole have thrust portions to thrust upon each other, and the thrust portion of the positioning hole has a flat surface.

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28. The tank holder according to claim 27, wherein the first engagement latch of the movable lever is engaged with the first engagement hole of the tank holder by utilizing resilience of the movable lever,

10 and wherein said ink tank is attached and fixed to said tank holder by pressing said ink tank, with the second engagement latch engaged with the second engagement hole of said tank holder, against the side surface on which the second engagement hole is provided.

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29. The tank holder according to claim 28, wherein the flat surface is diagonal to a direction in which said ink tank is pressed upon the side surface.